the canal at Coinjock, these wind sets result in very strong current flows.

The dredged channel of the Atlantic Intracoastal Waterway runs through the middle of the North Landing River estuary and into the riverine portion where it is known as the Albemarle and Chesapeake Canal. The Waterway canal cuts across the interstream divide and connects with the Elizabeth River in the Chesapeake Bay drainage system. The Elizabeth River is the water body that constitutes much of the Norfolk harbor. This Waterway carries a heavy load of commercial and recreational traffic that generates frequent and fairly large boat wakes. The cumulative impact of the wave energy resulting from these wakes is a significant physical force that actively erodes the adjacent shorelines and effects the associated shallow water sediments.

The entire North Carolina portion of Currituck Sound is encompassed within Currituck County. The following numbers demonstrate a major growth in the population since the 1970's with an even greater projection for increased growth rates in the near future (Tschetter, 1989; Holman, 1993).

1960 = 6,601 people
1970 = 6,976
1980 = 11,089
1990 = 13,736
2000 = 18,516
2010 = 22,542

Most of the pre-1970's population was rural and scattered in small towns throughout the county with no major urban centers. The growth boom that began in the 1970's, and is projected to continue into the future, is largely associated with coastal ocean and estuarine development.

Holman (1993) classified the land use for the Currituck Sound watershed in 1990 as follows:

8.7% urban
33.0% agriculture
15.3% forests
40.6% wetlands
2.3% range and barren lands

The upland area consists of mixed pines and hardwood forests with extensive large-scale agricultural operations. Due to the generally low elevation and poor drainage system within the agricultural lands, most streams have been channelized with an extensive network of drainage ditches developed over the years (SCS, pers. comm.). Holman (1993) reported 17 point source dishargers, including 1 into Back Bay, 6 into North Landing River, 7 into Northwest River, and 3 into Currituck Sound. All of these NPDES discharges are small with less than 0.5 MGD and are not considered to be major contributors of trace metal pollutants.

Nonpoint discharges are the other important potential sources for pollutants within an estuarine system. Dodd et al. (1992) found that nonpoint sources were responsible for the highest loadings in the Currituck Sound